

-can be creased, i.e. a pattern can be pressed on it, and can be folded along the creased pattern to develop the shape of a container, without breakage;

-it is heat-sealable with hermetic closure and the closure is easily tear-openable;

-has sufficient rigidity to substitute cardboard in the preparation of containers for beverages and foods in which a cardboard layer is used to perform the function of giving the container the necessary mechanical properties, in particular sufficient rigidity to maintain its shape under the deformation stress to which it is subjected during use.

**Martin, Jr.** describes a paperboard container constructed from a material comprising a paperboard substrate, a polyethylene terephthalate (PET) film with a heat sealable face, bonded to one surface of the paperboard, and a layer of polyolefinic resin covering the other surface of the paperboard, (abstract, Figure 3, col. 6, lines 44-56). The presence in the material of a polyolefinic resin layer is the essential feature of the invention of Martin Jr. (col.4, lines 16-24; claim 1, see col.5, lines 25-28 for the definition of “flame heat-sealable, and lines 28-33 for the definition of “non flame heat-sealable”) since the container must have at least one seam formed by bonding by flame heat sealing the polyethylene terephthalate film and the polyolefinic resin layer.

**Joosten** discloses a container made of a material including a central bulk layer such as kraft paperboard, foamed thermoplastic sheet, synthetic paperboard, or composite paperboard, with an outer layer of modified polyethylene, an adjacent inner layer of a suitable polyester, and an innermost layer of polyvinylidene chloride (abstract, first paragraph; claim 1). A generically designated “foamed thermoplastic sheet” is thus indicated as an alternative for the paperboard in the structure comprising from the inside to the outside a polyvinylidene chloride layer with heat-sealable characteristics covering a PET layer secured to the inner surface of a paperboard substrate, and a polyethylene layer covering the outer layer of the paperboard substrate. The nature of the foamed thermoplastic is not specified.

**Ochi et al.** discloses a container for a hot melt adhesive, i.e. a product is solid at room temperature and is applied in molten state to the adherent when hot and subsequently solidifies on cooling to realize adhesion, the container being made of a foamed PET sheet. The sheet is formed into a box-shaped container by folding (according to a pattern) by “pushing it into a filing jig for hot-melt adhesive” (abstract).

The Examiner’s objection reads as follows:

*“Matrin, Jr. fails to disclose a substrate which is polyethylene terephthalate foam. Joosten teaches that a foamed thermoplastic is equivalent to paperboard in the fabrication of fruit juice containers....Ochi et al. teach a container which is fabricated from polyethylene*

*terephthalate foam, in order to make the container recyclable ... It would therefore have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to use polyethylene terephthalate rather than paperboard in the invention of Martin Jr. for the purpose of making the container recyclable."*

Office Action, paragraph bridging pages 2 and 3. Applicant respectfully, but vigorously, traverses.

To establish obviousness the examiner must proffer an objective showing that would lead one of ordinary skill to the claimed subject matter. In this regard, the Applicant notes that:

*the consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art...Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure.*

In re Dow Chemical, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988).

Here, the examiner has not identified any **objective suggestion** in the cited art to modify the **Martin, Jr.** material so as to contain a layer formed of a polyester resin foamed sheet and adhered thereto a heat-sealable film of polyester resin, as required by the claims. For this reason alone, the rejection should be withdrawn.

Even if, as the Examiner alleges, **Jooster** teaches that a foamed thermoplastic is equivalent to paperboard for the material disclosed therein, it does not teach or suggest a foamed thermoplastic to be equivalent to the paperboard in a material other than the material disclosed therein, i.e. it does not disclose a foamed thermoplastic to be equivalent with paperboard in a material other than a material "including a suitable central bulk layer such as kraft paperboard, foamed thermoplastic sheet, synthetic paperboard, or composite paperboard, with an outer layer of modified polyethylene, an adjacent inner layer of a suitable polyester, and an innermost layer of polyvinylidene chloride" (Abstract, see also page 6, lines 4-17). Moreover, there is no teaching or suggestion as to the nature of the foamed thermoplastic to be used and there is no showing that a foamed polyester can be successfully used even for obtaining the material of Jooster.

There is **no motivation** to make a material comprising a layer formed of a polyester resin foamed sheet having adhered thereto a heat-sealable polyester resin film as required by the claims. Obtaining a recyclable material cannot be a motivation for replacing the paperboard of Martin, Jr. with a foamed polyester resin sheet, since the material thus obtained would not be recyclable for the presence of the polyethylene layer. In fact, the polyethylene film renders the material chemically

heterogeneous and therefore non-recyclable. To obtain a recyclable material one should also eliminate the polyethylene layer of Martin, Jr. but by doing so one would obtain a material unsuitable for the invention of Martin, Jr., since the polyethylene layer is indispensable for the flame heat-sealing of the material and this is an essential feature of the material of Martin, Jr. To obtain a recyclable material, one should thus depart from the invention of Martin, Jr.; a new kind of container would be created having its own properties such as different heat-sealing properties and this would amount to making a new invention.

Even if, as the Examiner alleges, Ochi et al. teach a container fabricated from polyethylene terephthalate foam, they do not teach or suggest a container suitable for containing non solid materials as beverages as requested by the present invention.

In fact, the container of Ochi et al is not suitable for beverages and foods which require a hermetic closure.

Herewith enclosed is a Declaration under 37 CFR 1.132 by Mrs. Giovannini showing that a PET foamed sheet as such (as used by Ochi et al.) cannot be folded along the lines of a pattern creased on it without breakage.

**No expectation of success** can be found in the prior art for using polyester foamed sheet, and in particular a PET foamed sheet to obtain a material adapted to be folded along a pattern creased on it to obtain a container suitable for containing beverages.

On the contrary, one of ordinary skill in the art would have discharged a foamed PET sheet for preparing a recyclable material for containers for beverages knowing that the PET foamed sheet cannot withstand the creasing-folding operations which are needed to manufacture the containers.

The inventors of the present invention were the first to find that a sheet of foamed polyester resin having adhered thereto a heat-sealable film of polyester resin can be used to obtain a recyclable container for beverages and foods, by folding along a pattern creased on it, and this is exactly what it is claimed.

In view of the above, the Applicant requests that the Examiner withdraw the objection.

However, there are a number of other differences between the teachings of the prior art of record and the presently claimed invention.

For example, no teaching or suggestion can be found in the prior art that a polyester resin film, and in particular a low melting polyester resin film, adhered to a foamed polyester sheet allows to avoid the breakage of the foamed polyester sheet when it is subjected to creasing-folding operations.

Even if, as the Examiner alleges, **The Enciclopedia of Polymer Science and Engineering** teaches that polyethylene terephthalate-isophthalate copolymer can be used instead of polyethylene

terephthalate as the outer layer of a heat sealable film in order to obtain a film having a lower softening and melting point, neither it nor the other references of record do teach or suggest a material comprising such a polyester film adhered to a foamed polyester sheet thereby rendering the film creasable and foldable without breakage.

In view of the foregoing, favorable action on the merits including reconsideration and withdrawal of each rejection, and allowance of all claims is respectfully solicited.

Respectfully submitted,

  
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Encl.: Declaration under 37 CFR 1.132 of Arianna Giovannini;  
Petition for extension of time, in duplicate.